REMARKS/ARGUMENTS

In the system depicted in FIG. 3 of McMillin, a complicated computation, as depicted in McMillin's FIG. 4, is carried out. As pointed out in McMillin, at column 6, lines 23-29, "During operation, the open aperture of one or both of the throttle valves is adjusted based upon a comparison of the user selected flow-splitting setpoint and actual flow splitting fraction determined from the ratio of the measured flow in either line 12 or 14 to the total flow (measured by summing the respective flow meter readings in lines 12 and 14)." Further, as explained in McMillin's column 7, at lines 28-56, McMillin's control algorithm involves inputting setpoints, reading flows, determining the total flow, calculating target flows based upon a flow split setpoint and the total flow rate, selecting master and slave flow controllers, calculating the slave flow controller setpoint, and writing the setpoints to the flow controllers.

In contrast, in the Applicant's invention, the detected flow rate in the fully opened flow path is simply multiplied by a predetermined ratio of 1 or less, and the product is delivered as a set signal for the mass flow controllers (other than the one that is set to a fully opened condition). No complicated computation is carried out, and a quick response and accurate flow division is carried out, as shown in FIG. 7. In contrast,

Claim 1 has been amended to define more fully the manner in which the common controller generates set signals for the mass flow controllers other than the fully opened one.

Specifically, the common controller utilizes a feedback signal provided by a sensor, and is defined as "including means for generating a set signal . . . by multiplying the value of said feedback signal by a predetermined constant ratio. . .."

The simple set signal generating means, as defined in claim 1, as amended, is not described McMillin, and consequently claim 1, as amended, is not anticipated by McMillin under §102(b). Moreover, the possibility of deriving a set signal by simply multiplying by a constant ratio has been entirely overlooked by McMillin; nowhere in McMillin is there to be found a suggestion or teaching that would lead to the adoption of a "means for generating a set signal . . . by multiplying the value of said feedback signal by a predetermined constant ratio," as now defined in claim 1. Accordingly, the subject matter of claim 1, as amended, is not shown to have been obvious by anything taught in McMillin.

A pressure sensing type mass flow controller, as set forth in dependent claim 2 has been found to be particularly useful in the present invention because of its superior linearity. Although the Applicant's invention is distinguished from McMillin primarily by the multiplying means as specifically set forth in claim 1, claim 2, which specifies a pressure sensing type MFC, adds another distinguishing feature. The combination of pressure type mass flow controllers, as set forth in claim 2, and the multiplying means as set forth in claim 1, is not shown by McMillin to have been obvious.

New dependent claims 4 and 5, are directed to another aspect of the invention, namely, a system in which a secondary

flow path other than the one that is fully opened in operation, has a flow rate, when fully opened, that is greater than the flow rate of the fully opened flow path, and in which the ratio that determines the flow rate in the flow path other than the fully opened flow path is settable to 1 so that the flows can be made equal.

Several versions of the system are described by, and with reference to, FIG. 6. The version in first row of the table has three flow paths. As noted below the table, The "flow rate of fully opened Q1 > flow rate of fully opened Q2 > flow rate of fully opened Q3." Moreover, the ratios a and b, which determine the flows in paths Q1 and Q2 respectively, can both be made equal to 1. This is the mode of operation depicted in the top row in FIG. 6, where a=b=c(=1).

Claim 5 defines the system in the top row of FIG. 6 by reciting that the flow rate in the fully opened flow path is less than the flow rate in a first secondary flow path when the first secondary flow paths is fully opened, and the flow rate in the first secondary flow path when fully opened is less than the flow rate in a second secondary flow path when fully opened, and by reciting that the constant ratios are settable to 1, so that the flow rates in the flow paths can be made equal. This combination of features, as defined in claim 5, is not taught or suggested in McMillin.

Other versions are described in the second, third, and fourth rows of the table. In each of these versions, one of the flow paths is fully opened in operation, and one other flow path has a flow rate, when fully opened, that is greater than the flow rate in the fully opened flow path. The ratio

for these two flow paths can be set to 1, so that the flows can be made equal.

Claim 4, defines a system in which "the flow rate in the fully opened secondary flow path is less than the flow rate in another of said secondary flow paths when said another of said secondary flow paths is fully opened; and each said constant ratio is settable to 1, so that the flow rates in said fully opened flow path and in said another secondary flow paths can be made equal." Here again, this combination of features is not taught or suggested in McMillin.

The Applicant respectfully requests reconsideration of the application and allowance of claims 1-5.

Respectfully submitted,
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